



INDIAN INSTITUTE OF TECHNOLOGY (IIT) INDORE

Department of Biosciences and Biomedical Engineering (BSBE)

organizes

KARYASHALA

6 Days active learning and hands-on training on

"Isolation and characterization of viruses and bacteria from various samples"

Dates : 12th July – 17th July 2022

Sponsored by Science and Engineering Research Board

KARYASHALA : ACCELERATE VIGYAN SCHEME



ABOUT IIT INDORE

Indian Institute of Technology Indore, located in Madhya Pradesh, known as IIT Indore, is an institute of national importance established by the Government of India in 2009.

Department of Biosciences and Biomedical Engineering was established in the year 2012 with an aim to apply the principles of science and engineering to further fundamental knowledge and applications in biology and biomedical engineering.

COURSE DETAILS

Date	10 am - 1.00 pm	2 pm - 6 pm
12/7/2022	DNA isolation from bacteria, Virus and bacteria infected cells (Genomic DNA isolation and alkali lysis buffer methods)	Visualization, quantitation, analysis of DNA from pathogens and host cells (Agarose gel electrophoresis, nano drop, spectroscopy)
13/7/2022	RNA isolation from bacteria, virus and bacteria infected cells (Trizol method)	Visualization, quantitation, analysis of RNA from pathogens and host cells (RNA gel electrophoresis, nano drop, spectroscopy)
14/7/2022	Protein isolation from bacteria, virus and bacteria infected cells (RIPA lysis buffer)	Visualization, quantitation, analysis of protein from pathogens and host cells (Sample preparation, spectrometry)
15/7/2022	RNA to cDNA conversion and preparation of real time PCR plate (PCR, RT-PCR)	Real time PCR experiments with various primers and analysis the results (RT-PCR)
16/7/2022	SDS-PAGE preparation and cast the gel with protein samples (Protein cast in SDS PAGE)	Western blot experiments and analysis of blots through various examples (Western transfer, Immunoblot development)
17/7/2022	Importance of sequence, structure and docking in modern biology (Sequence alignment, structural alignments)	Setting up Protein-ligand and protein-protein docking studies (Autodoc Vina, CastP, PyMol)

COURSE FACULTY

- **Dr. Hem Chandra Jha**, Associate Professor, Department of BSBE, IIT Indore, Indore
- **Dr. Parimal Kar**, Associate Professor, Department of BSBE, IIT Indore, Indore
- **Prof. Rajesh Kumar**, Professor, Department of Physics, IIT Indore, Indore
- **Dr. Hamendra Singh Parmar**, Assistant Professor, School of Biotechnology, Devi Ahilya Vishwavidyalaya, Indore
- **Dr. Manivannan Elangovan**, Assistant Professor, School of Pharmacy, Devi Ahilya Vishwavidyalaya, Indore

COURSE MODULE

This is an active learning based course comprised of lectures, tutorials, and hands-on training/ demonstrations.

CERTIFICATE

Participants who successfully complete the course will be awarded with a certificate.

TARGET PARTICIPANTS

This course is tailor made for students and researchers from any academic background.

REGISTRATION PROCESS

Interested participants need to submit the online form: [click here](#)

Number of participants are limited to 10 M.Sc. students and 10 PhD scholars only, on first come first basis.

ONLINE REGISTRATION LINK : [click here](#)

REGISTRATION DEADLINE: 27th June 2022

COURSE COORDINATOR AND ORGANIZER: **DR. HEM CHANDRA JHA**

Contact number : +91 9971653189

Email : hemcjh@iiti.ac.in

Website : <https://sites.google.com/view/infectionbioengineering>

COURSE FEES : ₹ 2000/-

BANK DETAILS FOR PAYMENT

Bank name: Canara Bank
Branch name : Simrol IIT branch

Account Number : 1476101027440
IFSC Code : CNRB0006223